

OF ORDER#

73RF 298E

## EG&G ROCKY FLATS

**EG&G ROCKY FLATS, INC.**

ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

DIST.	LTR	ENC
MARAL, M.E.		
ENEDETTI, R.L.		
ENJAMIN, A.		
ERMAN, H.S.		
RANCH, D.B.		
ARNIVAL, G.J.		
OPP, R.D.		
AVIS, J.G.		
ERRERA, D.W.		
NNI, B.J.		
ARMAN, L.K.		
EALY, T.J.		
DAHL, T.		
LBIG, J.G.		
UTCHINS, N.M.		
RBV, W.A.		
ESTER, A.W.		
HAFFEEY, J.W.		
NN, H.P.		
APX, G.E.		
EDONALD, M.M.		
KENNA, F.G.		
NTROSE, J.K.		
ORGAN, R.V.		
OTTER, G.L.		
ZZUTO, V.M.		
SING, T.L.		
NDLIN, N.B.		
TLOCK, G.H.		
EWART, D.L.		
LLIVAN, M.T.		
WANSON, E.R.		
LKINSON, R.B.		
LLIAMS, S.(ORC)		
LSON, J.M.		
YANT, R.D.		
<i>rimrose, AL</i>	<i>✓</i>	<i>✓</i>
<i>currin, PE</i>	<i>✓</i>	<i>✓</i>
<i>Bushy, WS</i>	<i>✓</i>	<i>✓</i>
RRRES. CONTROL	X	X
OMN RECORD/0802	<i>✓</i>	<i>✓</i>
TS/T130G		
AFFIC		

**CLASSIFICATION:**

NI		
CLASSIFIED		
CONFIDENTIAL		
SECRET		

**AUTHORIZED CLASSIFIER  
SIGNATURE**

~~DOCUMENT CLASSIFICATION~~  
~~REVIEW WAIVER PER~~  
~~DECLASSIFICATION OFFICE~~

REPLY TO RFP CC NO:

CTION ITEM STATUS  
PARTIAL/OPEN

☒ CLOSED

APPROVALS:

ALP:ALP

### DRIG & TYPIST INITIALS

November 16, 1993

93-RF-298E

Scott R. Grace  
Operable Unit 2 Project Manager  
Environmental Restoration Division  
DOE, RFO

Attn: E. A. Dillé

PROCESS IMPROVEMENT FROM THE REVISED OPERABLE UNIT 2 BEDROCK FIELD PROGRAM  
- ALP-048-93

As requested, attached is a summary of the difference in approach and the estimated costs associated with the Original and Revised Operable Unit 2 Phase II RCRA [Resource Conservation and Recovery Act] Facilities Investigation/Remedial Investigation Bedrock Field Programs.

Please contact P. J. Laurin at extension 8702 if you would like additional information.

Annette L. Primrose  
Group 1 Project Manager  
ERM/Remediation Project Management

dql

Orig. and 1 cc - S. R. Grace

Attachment:  
As Stated

**ADMIN RECORD**

## OU 2 BEDROCK FIELD PROGRAM SUMMARY

The original Bedrock Field Program was designed to acquire information in order to develop a conceptual model for the Lower Hydrostratigraphic Unit (LHSU) bedrock hydrogeology. In addition, data were to be gathered to determine the nature and extent of bedrock contamination, release mechanisms, exposure pathways and receptors, and to support the planned baseline risk assessment for the bedrock. The Work Plan for this program was approved by the Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) in June 1991.

The Revised Bedrock Field Program was designed to be a focused program to verify that contamination associated with the LHSU is limited and that the LHSU exposure pathway is limited. The reduction in scope from the original Bedrock Field Program is the result of utilizing data for the LHSU that was collected and/or compiled during the Operable Unit (OU) 2 Phase II Alluvial field investigation. These data indicated that the LHSU sandstones were discontinuous and of low permeability.

The Revised Bedrock Field Program was designed to incorporate the Observational Approach, and data obtained for each phase of the field program was used to evaluate whether subsequent investigation phases were necessary. In addition, whether or not a baseline risk assessment for the LHSU would be done would depend on whether contaminants were present at detectable levels and if a complete exposure pathway exists in the LHSU. Conditional Approval was granted from CDH and EPA prior to the start of the field work. The Revised Bedrock Work Plan was approved by the CDH in August 1993, and by EPA in September 1993.

The Observational Approach utilized information obtained during the Revised Bedrock Field Program to further descope the ongoing field program. In addition, based on the data gathered, a quantitative baseline risk assessment for the LHSU will not be performed.

### ESTIMATED COSTS FOR THE OU 2 BEDROCK PROGRAMS

### ORIGINAL BEDROCK SCOPE

**20 boreholes**

38 wells

**Total Footage      5,945 feet • \$620/ft      =      \$4,399,300**

Estimated samples ~400 samples \* \$4,254/sample = \$1,701,600

TOTAL	\$6,100,900
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### PROPOSED REVISED BEDROCK SCOPE USING OBSERVATIONAL APPROACH

8 boreholes

12 wells

**Total Footage            2,229 feet \* \$620/ft                         =      \$1,649,460**

Estimated Samples 331 samples • \$4,254/sample = \$1,408,074

TOTAL	\$3,057,534
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### ESTIMATED COSTS FOR THE ACTUAL REVISED BEDROCK FIELD PROGRAM

8 boreholes

7 wells

**Actual Footage      1,808 feet \* \$620/ft      =      \$1,120,960**

Actual Samples      331 samples \* \$4,254/sample      =      \$1,408,074

TOTAL	\$2,529,034
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Differences between the proposed and actual Revised Bedrock Program are the result of implementing the observational approach. As additional data was gathered, unnecessary wells were eliminated from the program.

The drilling cost of \$620 per foot is based upon actual costs of recent drilling programs at Rocky Flats Plant. The sample cost of \$4,254 per sample is based on the actual 1993 cost of soil sample analysis at Rocky Flats Plant.